What is claimed is:

1. A method for scheduling link bandwidth between different packet-switched data flows, the method comprising the steps of

- digital data is transferred in the form of fixed- or variable-length packets,
- the packets are marked with identifier information allowing the packets to be classified into at least two classes of service,
- on the basis of the information indicating the class of service, each one of the inbound packets are individually classified into one of class of service -specific parallel FIFO queues (4, 5, 6), the number of the queues being one per each class of service,
- at least one class of service is having its packets tagged with identifier information allowing the packets to be classified into at least two internal subgroups within said class of service,
- packets of a given class of service form a data flow, wherein the forwarding order of the packets is retained irrespective of the subgroup-defining identifier information carried in the packet, and
- the available bandwidth of the outbound link or links of the system is scheduled (1) between said class-of-service specific FIFO queues using a weight-based scheduling discipline, a priority-based scheduling discipline or a combination thereof,

characterized in that the packet-specific priority value in the priority-based scheduling discipline and/or the weight in the weight-based scheduling discipline is determined by using the combined effect of variables q and p, whereby the value of variable q is dependent on the class of service (CoS) assigned to the data flow transferred by the packet in question and the value of variable p is dependent on the subgroup (e.g., drop precedence) whereto the packet in question belongs and/or on the classification into subgroups of the inbound packets of the same class of service that are received at the scheduler input port preceding or following the packet in question.

2. The method of claim 1, **characterized** in that the selection between the use of a weight-based or a priority-based scheduling discipline is made based on the subgroup whereto the packet in question belongs and/or how the inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups.

3. The method of claim 1, **characterized** in that said weight-based scheduling discipline is an SFQ (Start-time Fair Queuing [1]) discipline.

4. The method of claim 1, **characterized** in that said weight-based scheduling discipline is a WFQ (Weighted Fair Queuing [1]) discipline.

5. An apparatus for scheduling link bandwidth between different packet-switched data flows, the apparatus comprising

- means for receiving digital data in the form of fixed- or variable-length packets,
- means for reading identifier information carried in said inbound packets and allowing said packets to be classified into at least two different classes of service,
- means for individually classifying said inbound packets into at least two different classes of service,
- a FIFO packet queue (4, 5, 6) for each one of said classes of service,
- means for directing a given packet on the basis of its class of service - specific identifier information in the respective class of service -specific FIFO queue,
- means for reading from a given packet its identifier information that allows said packet to be classified as to the internal subgroup of the class of service assigned to the packet,
- a scheduler (1) for scheduling the available bandwidth of outbound link(s) of the system for class-of-service specific FIFO queues (4, 5, 6)

using a weight-based scheduling discipline, a priority-based scheduling discipline or a combination thereof, and

- means for sending packets to an outbound link(s) in the forwarding order of the packets determined by said scheduler (1),

characterized in that said apparatus includes means for on per packet basis determination of priority value in the priority-based scheduling discipline and/or weight in the weight-based scheduling discipline using the combined effect of variables q and p, whereby the value of variable q is dependent on the class of service (CoS) assigned to the data flow transferred by the packet in question and the value of variable p is dependent on the subgroup (e.g., drop precedence) whereto the packet in question belongs and/or on the classification into subgroups of the inbound packets of the same class of service that are received at the scheduler input port preceding or following the packet in question.

6. The apparatus of claim 5, **characterized** in that said apparatus includes means for decision-making between the use of a weight-based or a priority-based scheduling discipline is carried out based on the subgroup whereto the packet in question belongs and/or how the inbound packets of the same class of service received at the scheduler input port preceding or following the packet in question are distributed between the subgroups.

7. The apparatus of claim 5, **characterized** in that said apparatus includes means for carrying out a weight-based scheduling discipline using an SFQ (Start-time Fair Queuing [1]) discipline.

8. The apparatus of claim 5, **characterized** in that said apparatus includes means for carrying out a weight-based scheduling discipline using a WFQ (Weighted Fair Queuing [1]) discipline.